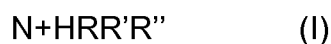


AMENDMENTS TO THE CLAIMS:

Claims 1-56 (Canceled).

Claim 57 (Currently Amended). A method for using an ionic liquid in an application ~~selected from the group consisting of a solvent for enzyme-catalyzed reactions, a solvent for organic synthesis, a matrix in matrix-assisted laser desorption/ionisation (MALDI) mass spectrometry, a solvent for extraction, catalysis or liquefaction, a nuclear fuel reprocessing medium, a fuel cell additive, an electrochemical application, pervaporation, drug delivery, lubrication, hydraulics, adhesives, sensors, biocides, and chromatographic media, comprising:~~

using the ionic liquid comprising an anion and a cation wherein the cation is a tertiary ammonium ion of the formula (I)



wherein:

R is an alkyl group substituted with one or more hydroxy groups;

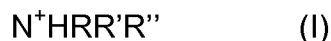
R' and R'' are independently alkyl or substituted alkyl groups optionally substituted with one or more substituents selected from the group consisting of a nitrogen-containing functional group, an alkoxy group, and a hydroxy group; the nitrogen-containing functional group selected from the group consisting of nitrile, nitro, and amino; the substituted alkyl optionally comprising one or more ether linkages; [[and]]

the anion is selected from the group consisting of a nitrate, sulphate, phosphate, carbonate, sulphonate, and carboxylate; and

the application is selected from the group consisting of a solvent for enzyme-catalyzed reactions, a solvent for organic synthesis, a matrix in matrix-assisted laser desorption/ionisation (MALDI) mass spectrometry, a solvent for extraction, catalysis or liquefaction, a nuclear fuel reprocessing medium, a fuel cell additive, an electrochemical application, pervaporation, drug delivery, lubrication, hydraulics, adhesives, sensors, biocides, and chromatographic media.

Claim 58. (Previously Presented): A method for carrying out an enzyme-catalyzed reaction comprising:

i.) providing a liquid reaction medium which contains an ionic liquid comprising an anion and a cation wherein the cation is a tertiary ammonium ion of the formula (I)



wherein:

R is an alkyl group substituted with one or more hydroxy groups;

R' and R'' are independently alkyl or substituted alkyl groups optionally substituted with one or more substituents selected from the group consisting of a nitrogen-containing functional group, an alkoxy group, and a hydroxy group; the nitrogen-containing functional group selected from the group consisting of nitrile, nitro, and amino; the substituted alkyl comprising one or more ether linkages; and

the anion is selected from the group consisting of a nitrate, sulphate, phosphate, carbonate, sulphonate, and carboxylate;

ii.) providing in the liquid reaction medium an enzyme and a substrate for the enzyme; and

iii.) allowing reaction of the substrate to occur.

Claims 59-61 (Canceled).

Claim 62 (Previously Presented). The method of claim 57, wherein the ionic liquid has a melting point below 25 °C, a viscosity of less than 500 centipoise, and contains less than 1% water.

Claim 63 (Previously Presented). The method of claim 57, wherein R of the ionic liquid is a hydroxyalkyl having 1, 2, 3, 4, 5 or 6 C atoms.

Claim 64 (Previously Presented). The method of claim 63, wherein the hydroxyalkyl has a hydroxyl moiety on its free, terminal carbon.

Claim 65 (Previously Presented). The method of claim 57, wherein the cation of the ionic liquid is selected from the group consisting of an N,N-dimethylethanolammonium ion, a triethanolammonium ion, and an N-butyldiethanolammonium ion.

Claim 66 (Previously Presented). The method of claim 57, wherein the anion of the ionic liquid is selected from the group consisting of bis(trifluoromethylsulphonyl)imide, formate, butanoate, pentanoate, hexanoate, heptanoate, octanoate, nonanoate, decanoate, glycolate, crotonate, pyruvate, succinate, and phenylacetate.

Claim 67 (Previously Presented). The method of claim 57, wherein the ionic liquid is selected from the group consisting of:

- N-butyl-diethanolammonium formate;
- N-butyl-diethanolammonium acetate;
- N-butyl-diethanolammonium propanoate;
- N-butyl-diethanolammonium butanoate;
- N-butyl-diethanolammonium pentanoate;
- N-butyl-diethanolammonium hexanoate;
- N-butyl-diethanolammonium heptanoate;
- N-butyl-diethanolammonium octanoate;
- N-butyl-diethanolammonium nonanoate;
- N-butyl-diethanolammonium decanoate;
- N-butyl-diethanolammonium benzoate;
- N-butyl-diethanolammonium benzenedicarboxylate;
- N-butyl-diethanolammonium benzenetricarboxylate;
- N-butyl-diethanolammonium benzenetetracarboxylate;
- N-butyl-diethanolammonium chlorobenzoate;
- N-butyl-diethanolammonium fluorobenzoate;
- N-butyl-diethanolammonium pentachlorobenzoate;
- N-butyl-diethanolammonium pentafluorobenzoate;
- N-butyl-diethanolammonium glycolate;
- N-butyl-diethanolammonium pantothenate;
- N-butyl-diethanolammonium mandelate;
- N-butyl-diethanolammonium crotonate;
- N-butyl-diethanolammonium malate;
- N-butyl-diethanolammonium pyruvate;
- N-butyl-diethanolammonium succinate;

N-butyl-diethanolammonium citrate;
N-butyl-diethanolammonium phenylacetate;
N-butyl-diethanolammonium oxalate;
N-butyl-diethanolammonium bis(trifluoromethylsulphonyl)imide;
N-butyl-diethanolammonium carbonate;
N-butyl-diethanolammonium hydrogen carbonate;
N-butyl-diethanolammonium sulphate;
N-butyl-diethanolammonium hydrogen sulphate;
N-butyl-diethanolammonium methanesulphonate;
N-butyl-diethanolammonium trifluoromethanesulphonate;
N-butyl-diethanolammonium ethylenediaminetetraacetate;
N-butyl-diethanolammonium hexafluorophosphate;
N-butyl-diethanolammonium tetrafluoroborate;
N-butyl-diethanolammonium trifluoroacetate;
N-butyl-diethanolammonium pentafluoropropanoate;
N-butyl-diethanolammonium heptafluorobutanoate;
N,N-dimethylethanolammonium formate;
N,N-dimethylethanolammonium acetate;
N,N-dimethylethanolammonium propanoate;
N,N-dimethylethanolammonium butanoate;
N,N-dimethylethanolammonium pentanoate;
N,N-dimethylethanolammonium hexanoate;
N,N-dimethylethanolammonium heptanoate;
N,N-dimethylethanolammonium octanoate;
N,N-dimethylethanolammonium nonanoate;
N,N-dimethylethanolammonium decanoate;
N,N-dimethylethanolammonium benzoate;
N,N-dimethylethanolammonium benzenedicarboxylate;
N,N-dimethylethanolammonium benzenetricarboxylate;
N,N-dimethylethanolammonium benzenetetracarboxylate;
N,N-dimethylethanolammonium chlorobenzoate;

N,N-dimethylethanolammonium fluorobenzoate;
N,N-dimethylethanolammonium pentachlorobenzoate;
N,N-dimethylethanolammonium pentafluorobenzoate;
N,N-dimethylethanolammonium glycolate;
N,N-dimethylethanolammonium pantothenate;
N,N-dimethylethanolammonium mandelate;
N,N-dimethylethanolammonium crotonate;
N,N-dimethylethanolammonium malate;
N,N-dimethylethanolammonium pyruvate;
N,N-dimethylethanolammonium succinate;
N,N-dimethylethanolammonium citrate;
N,N-dimethylethanolammonium phenylacetate;
N,N-dimethylethanolammonium oxalate;
N,N-dimethylethanolammonium bis(trifluoromethylsulphonyl)imide;
N,N-dimethylethanolammonium carbonate;
N,N-dimethylethanolammonium hydrogen carbonate;
N,N-dimethylethanolammonium sulphate;
N,N-dimethylethanolammonium hydrogen sulphate;
N,N-dimethylethanolammonium methanesulphonate;
N,N-dimethylethanolammonium trifluoromethanesulphonate;
N,N-dimethylethanolammonium ethylenediaminetetraacetate;
N,N-dimethylethanolammonium hexafluorophosphate;
N,N-dimethylethanolammonium tetrafluoroborate;
N,N-dimethylethanolammonium trifluoroacetate;
N,N-dimethylethanolammonium pentafluoropropanoate; and
N,N-dimethylethanolammonium heptafluorobutanoate.

Claim 68 (Previously Presented). The method of claim 58, wherein the ionic liquid has a melting point below 25 °C, a viscosity of less than 500 centipoise, and contains less than 1% water.

Claim 69 (Previously Presented). The method of claim 58, wherein the cation of the ionic liquid is selected from the group consisting of an N,N-dimethylethanolammonium ion, a triethanolammonium ion, and an N-butyl-diethanolammonium ion.

Claim 70 (Previously Presented). The method of claim 58, wherein the anion of the ionic liquid is selected from the group consisting of bis(trifluoromethylsulfonyl)imide, formate, butanoate, pentanoate, hexanoate, heptanoate, octanoate, nonanoate, decanoate, glycolate, crotonate, pyruvate, succinate, and phenylacetate.